

REMARKS

The Office Action of May 9, 2007 has been received and its contents carefully considered.

The Office Action objects to the drawings for failing to illustrate features that are recited in claims 3-5. This objection is respectfully traversed, on the ground that the drawings of this application do indeed illustrate the features recited in these claims. See Figure 14.

The Office Action also rejects independent claims 1, 2, and 37 (along with various dependent claims) for anticipation by patent 6,114,763 to Smith. The rejection is respectfully traversed for the reasons discussed below.

Claim 1 provides that a semiconductor device is mounted on a substrate. A first heat radiating film is disposed on an area of the substrate. A second heat radiating film is disposed on a surface of the semiconductor device, but does not extend beyond the periphery of the surface, and is spaced apart from the first heat-radiating film.

The Office Action draws attention to Figure 2A of the Smith reference, and takes the position that element 12 (on the left and right sides of the central portion of this element) corresponds to the first heat radiating film of claim 1. The Office Action also takes the position that the central portion of element 12 corresponds to the second heat radiating film. Applicant respectfully disagrees with the characterization of Smith's element 12 that is advanced in the Office Action.

The passage at Smith's column 6, lines 9-14, advises that the arrangement shown in Figure 2A of the reference

further comprises a heat spreader 12 which is adhered to stiffener 11 with an adhesive 13. Heat spreader has a plurality of ports 14. Such ports can be used to encapsulate the assembly.

Slightly later, at lines 17-23 of column 6, the reference advises that a liquid composition that cures into a compliant encapsulant 19 (see Figure 2B) and spacers 21 can be injected through the ports 14. It is respectfully submitted that, since these passages refer to “a heat spreader 12” which has “a plurality of ports 14” through which a liquid composition can be injected, an ordinarily skilled person would understand that Smith’s heat spreader 12 is a single element with a plurality of holes that serve as the ports 14. Since Smith’s heat spreader 12 is a unitary element, it clearly extends beyond the periphery of the upper surface of Smith’s chip 1. In addition, Smith’s heat spreader cannot be partitioned into first and second heat radiating films that are “spaced apart” from one another. For these reasons, it is respectfully submitted that Smith does not anticipate the invention defined by claim 1. Nor would an ordinarily skilled person would have had an incentive to modify Smith’s arrangements so as to achieve what is recited in claim 1.

Independent claim 2 recites that “a heat radiating film is disposed on the second surface of the semiconductor device without extending beyond the periphery of the second surface...”. As was noted above, what Smith would teach to an ordinarily skilled person is that Smith’s heat spreader 12 extends beyond the top surface of this chip 1. Nothing in the reference would suggest limiting Smith’s heat spreader 12 to the top of his chip 1.

Independent claim 37 also recites first and second heat radiating films, with a second heat radiating film being “disposed on the second surface of the semiconductor device without extending beyond the periphery of the second surface...”. This is not disclosed or suggested by Smith.

The remaining claims depend from the independent claims discussed above and recite additional limitations to further define the invention. They are therefore automatically

patentable along with their independent claims. Nevertheless, it is noted that new dependent claims 43 and 44 recite that the first and second films are disposed at different distances from the substrate. In contrast, both the central portion and the peripheral portion of Smith's element 12 are disposed at the same distance from Smith's substrate.

For the foregoing reasons, it is respectfully submitted that this application is in condition for allowance. Reconsideration of the application is therefore respectfully requested.

Respectfully submitted,

A handwritten signature in cursive script that reads "Allen Wood". The signature is written in dark ink and is positioned above a horizontal line.

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